Quarterly Status Report – Public Page

Date of Report: July 21, 2011

Contract Number: DTPH56-10-T-000012

Prepared for: US Department of Transportation, Pipeline and Hazardous Materials Safety Administration

Project Title: Quality Management Systems for Pipelines/Guidelines to Address Pipeline Construction Quality Issues

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Progress to date:

The objectives of the proposed project are: 1) to develop guidelines pertaining to issues related to pipeline construction quality and how these issues should be addressed in the field, 2) to develop general guidelines for a Quality Management System (QMS) for pipeline projects (from design to commissioning) to provide greater assurance of consistent and acceptable quality and 3) to develop enhanced QMS guidelines that provide assurance of pipeline safety and integrity without having a pre-service hydrotest. The latter will be of particular benefit for pipeline projects in challenging environments such as the Arctic, where there may be a desire to eliminate the hydrotest due to significant associated costs and logistical challenges.

Activity to date has focused on the development of guidelines to address pipeline construction quality issues. A review of recent incidents and relevant literature was carried out (Milestone Deliverable No. 1). Finite element analyses were conducted to assess the effect of high-low misalignment and unequal wall thickness transitions for a broad range of variables (Milestone Deliverable No. 2). Key contributing factors to the load capacity reduction across girth welds were identified. A load capacity reduction model which estimates the load capacity reduction as a function of the key contributing factors is under development. Guidance for welding inspection personnel pertaining to what level of oversight is required to ensure that qualified welding procedures are followed in the field was developed. Guidance pertaining to preventing hydrogen cracking for welders and other field personnel was also drafted. The work to date has progressed as planned.